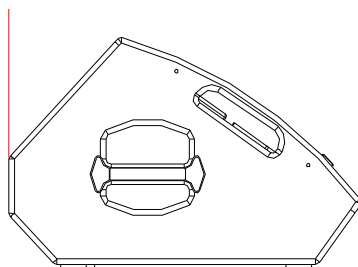


ADP-28M

USER MANUAL

V.13.04



Lynx Pro Audio S.L.

Valencia, Spain - www.lynxproaudio.com - info@lynxproaudio.com

- ▶ **Class D Powered (bi-amplified)**
- ▶ **Integrated Digital Processing**
- ▶ **Internal temperature control**
- ▶ **Electronic protection**
- ▶ **High quality components**
- ▶ **FIR linear phase filtering**
- ▶ **Online control available**



ADP-28M



Manufacturer



LYNX Pro Audio S.L.
Calle 7 - Pol. Ind. Picassent
E-46220 Picassent (Valencia)



**CB SCHEME, IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION
OF ELECTRICAL EQUIPMENT**



CE CERTIFICATION, EUROPEAN PRODUCT

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Before starting to use this device, please read this instruction manual carefully.
 Keep these instructions in the place where the equipment will be used and with easy access to them.



- Electrical appliance.

The exclamation mark within a triangle identifies the presence of electricity. Use the system carefully without wet hands or feet. Avoid installing the speaker in wet or excessively humid places. Do not place material that contains liquid on or near the unit. Avoid dripping or splashing water or any liquid over the unit. Regularly check the condition of the cables and make sure these are not being walked on or pinched. Connect the speaker to bipolar, earthed mains. The mains plug must be connected to the appropriate protection (fuse or breaker). Connection to any other type of mains could result in an electrical shock and violate local electrical codes. **CAUTION: DO NOT CONNECT OR DISCONNECT THE AC POWER CONNECTORS UNDER LOAD.**



- Heavy equipment.

Apply back protection when using the system. Avoid loading and unloading at heights.



- Electrical shock risk.

The diagonal mark within a triangle identifies the presence of dangerous voltage. Do not open or handle the interior of the box. These parts are not to be adjusted by the user. For maintenance and/or repair please go to an authorized service centre. In order to reduce the risk of electric shock, disconnect from AC before plug in or unplugging Audio signal cables. Reconnect to AC only if all signal connections are made and secured. Never manipulate the ground type plug provided. The AC mains plugs should always remain accessible for operation. Unplug the loudspeaker during storms or when it's being used for a long time.



- Hearing damage risk.

These systems can reproduce large quantities of sound pressure which can damage hearing. Take precautions if you are going to be near them for extended amounts of time and do not get too close.



- Hanging – Flying.

Do not hang the cabinets from the handles or from any other part other than the designated hanging point. When flying this system please observe the technical and “Rainbow” software data carefully. Never exceed the maximum safe working loads or ignore the instructions included within this manual. Use Only flying accessories provided by Lynx Pro Audio S.L. Rigging must be always carried out by professionals.



- Delicate Material.

Please ensure no foreign object or water enters the speaker. Only clean the unit with dry cloths. Do not use solvents.



-Overheating – Fire risk.

To reduce the risk of the speaker over heating, avoid direct contact with sunlight. Avoid placing the unit close to heat inducing objects such as radiators. Do not cover the equipment in use and do not block any ventilation openings. Do not put naked flame, such as lighted candles, close or on top of the unit.



- Electromagnetic and interferente emissions.

Avoid placing objects which through electromagnetic waves can damage the unit, such as mobile phones, lap tops, magnetic strip cards etc.

This system complies with normatives

EN 55103-1 (1)

EN 55103-2 (2)

(1) This device may not cause harmful interferences.

(2) This device may receive interference including interferences that may cause undesired working.



-IMPORTANT NOTE.

This Equipment must be used in accordance with these instructions and by trained professional personnel only. This equipment should not be used in places with extreme tropical climates. Don't

INTRODUCTION

To facilitate, correct and reliable use of the cabinet ADP-28M we have designed this instruction manual. Please read the manual carefully before proceeding to install this multipurpose cabinet.

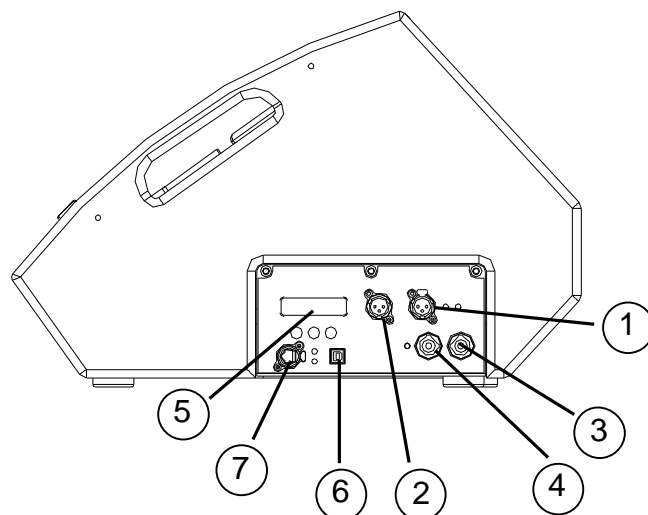
Please observe the technical data carefully and do not ignore the instructions included within this manual.

SPECIFICATIONS:

FREQUENCY RANGE	50Hz -19KHz
FREQUENCY RESPONSE	63Hz- 18KHz \pm 3dB
HORIZONTAL COVERAGE	45°
VERTICAL COVERAGE	45°
MAX SPL	127 dB/ 130 dB peak
CROSSOVER	1300 Hz
TRANSDUCERS	LF/MF: 2 x 8" HF: 1 x 1" exit throat polyimide diaphragm
SHAPE	Trapezoidal
POWER AMPLIFIER	1000W Class D with Switching Power supply 2 power modules 500W Low/Mid + 500W High
DSP	Internal processor DSPB-22® with FIR filters
CABINET ADJUSTMENT	Side panel LCD screen
INTERNAL CONTROLS	Temperature sensor / Fan Speed control
SIGNAL CONNECTION	NEUTRIK connectors XLR Male Input XLR Female Loop Thru
CONTROL CONNECTIONS	USB (DSP programming), ETHERNET* (Online Control System OCS)
AC POWER	230v / 115v selectable. 50/60 Hz 5A
AC CONNECTIONS	16A NEUTRIK POWERCON Looping Output
CONSTRUCTION	15 mm Premium Birch plywood
FINISH	High resistant water-based black paint
FRONT DESIGN	Black antirust steel grille with foam protector
DIMENSIONS (H x W x D)	348 x 510 x 528 mm
WEIGHT	28 Kg (61 lbs)

* Ethernet connection is optional.

ADP-28M BACK PANEL.-

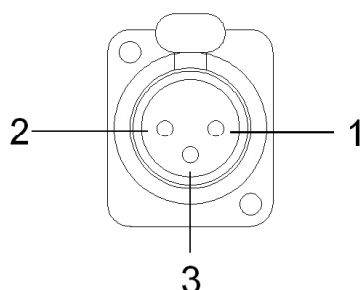


- 1.- SIGNAL INPUT
- 2.- SIGNAL LINK
- 3.- AC INPUT
- 4.- AC LINK
- 5.- DSP CONTROL
- 6.- USB
- 7.- ETHERNET (optional)

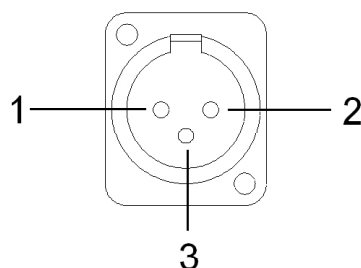
CONNECTORS AND CONNECTIONS



XLR SOCKET CONNECTORS

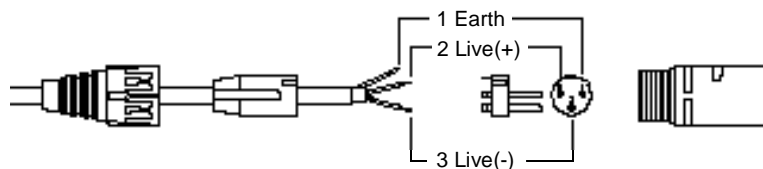


- INPUTS**
- 1.- EARTH
 - 2.- LIVE (+)
 - 3.- LIVE (-)

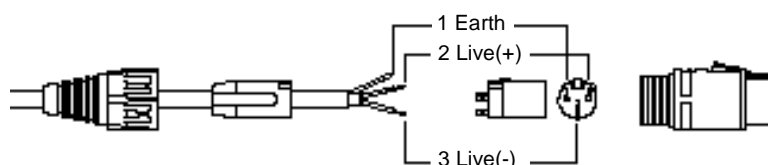


- OUTPUTS**
- 1.- EARTH
 - 2.- LIVE (+)
 - 3.- LIVE (-)

XLR AEREAL CONNECTORS



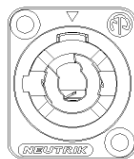
Connect to output



SOCKET POWERCON CONNECTORS



CAUTION: Do not connect or disconnect the AC Power connectors under load.

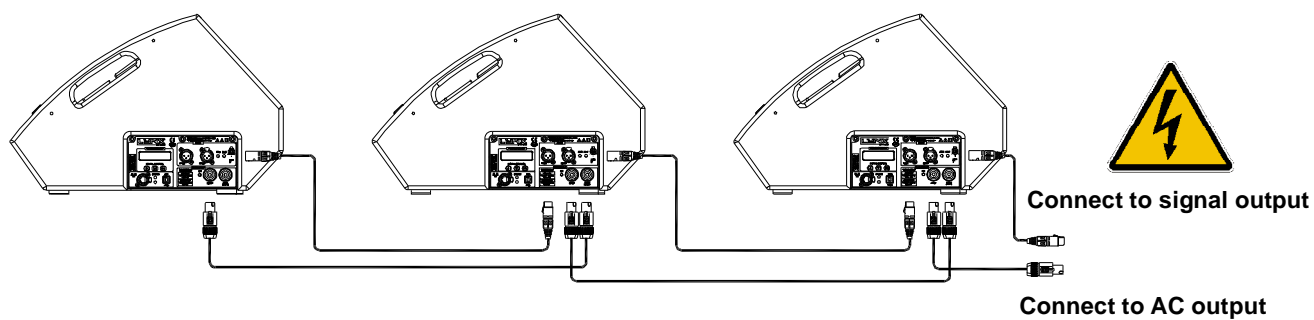


L - Line

N - Neutral

⏏ - Earth

CONNECTION EXAMPLE: 3 ADP-28M CABINETS



CONFIGURING THE CABINET DSP OPTIONS

From the buttons below the display on the cabinet's back panel you are able to configure the Basic adjustment functions of the internal DSP. Depending on the model, you can find the following configurations:

PRESET LIST

Preset	Display Name	Additional info
01	FIR FULL RANGE	Full range with FIR filters
02	FIR LPF 16KHz	16 KHz low pass with FIR filters
03	FIR LPF 17KHz	17 KHz low pass with FIR filters
04	FIR HPF 60Hz	60 Hz high pass with FIR filters
05	FIR HP60LP16K	60 Hz high pass 16KHz low pass, FIR filters
06	FIR HP60LP17K	60 Hz high pass 17KHz low pass, FIR filters
07	FIR HPF 80Hz	80 Hz high pass with FIR filters
08	FIR HP80LP16K	80 Hz high pass 16KHz low pass, FIR filters
09	FIR HP80LP17K	80 Hz high pass 17KHz low pass, FIR filters
10	FIR HPF 90Hz	90 Hz high pass with FIR filters
11	FIR HP90LP16K	90 Hz high pass 16KHz low pass, FIR filters
12	FIR HP90LP17K	90 Hz high pass 17KHz low pass, FIR filters
13	FIR HPF 100Hz	100 Hz high pass with FIR filters
14	FIR HP100LP16K	100 Hz high pass 16KHz low pass, FIR filters
15	FIR HP100LP17K	100 Hz high pass 17KHz low pass, FIR filters
16	FIR FULL RANGE	Full range with FIR filters
17	FIR FULL RANGE	Full range with FIR filters
18	FIR FULL RANGE	Full range with FIR filters
19	FIR FULL RANGE	Full range with FIR filters
20	FIR FULL RANGE	Full range with FIR filters

Note:

You must apply the desired configuration in each one cabinet. This is done via the buttons located on the back panel of the cabinet and requires electrical power to work.

FIR FILTERS

Finite Impulse Response (FIR) filters are used in the signal processing of the ADP-28M cabinet. FIR is a type of digital filter with linear phase characteristics. This frees system designers from the constraints of phase anomalies associated with analogue filters or their digital versions (IIR, Infinite Impulse Response). When properly used, FIR filtering can audibly improve a system's impulse response and reduce crossover interference.

CONFIGURATION PANEL

On the back panel you will see 3 buttons and an information screen, on which you can read the established parameters and information such as amplification module temperature, input signal level and name of the current preset (Fig1). If changes are not made the display will automatically dim to save energy and avoid unnecessary light in situations where light is not wanted. To re-activate the light simply press the OK button.



Fig 1

SELECT AND RUN PRESET

To change the preset configuration just press the up button (Fig2(1)) and down button (Fig2(2)) until you see the title and present number required. Once found, press OK (Fig2(3)) until the progress bar finishes (Fig3). The display will indicate "Loading DSP" (Fig4).

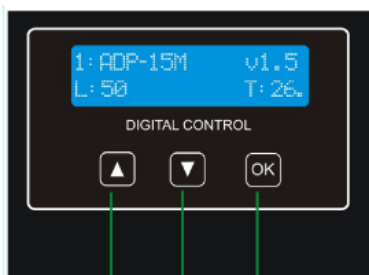


Fig 2

1

2

3

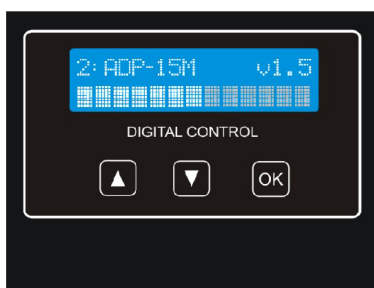


Fig 3

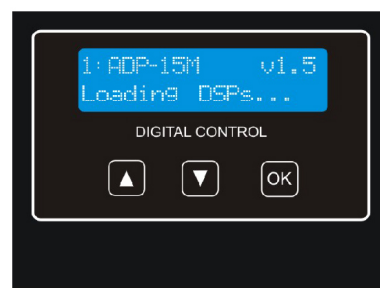


Fig 4

Note:

In case of a power cut, the DSP will save its last configuration when restarted.

ONLINE CONTROL SYSTEM

Who is it for?

Users of Self powered DSP incorporated Lynx Pro Audio Cabinets where the user has requested the cabinets be supplied with the Ethernet Module kit.

What is it for?

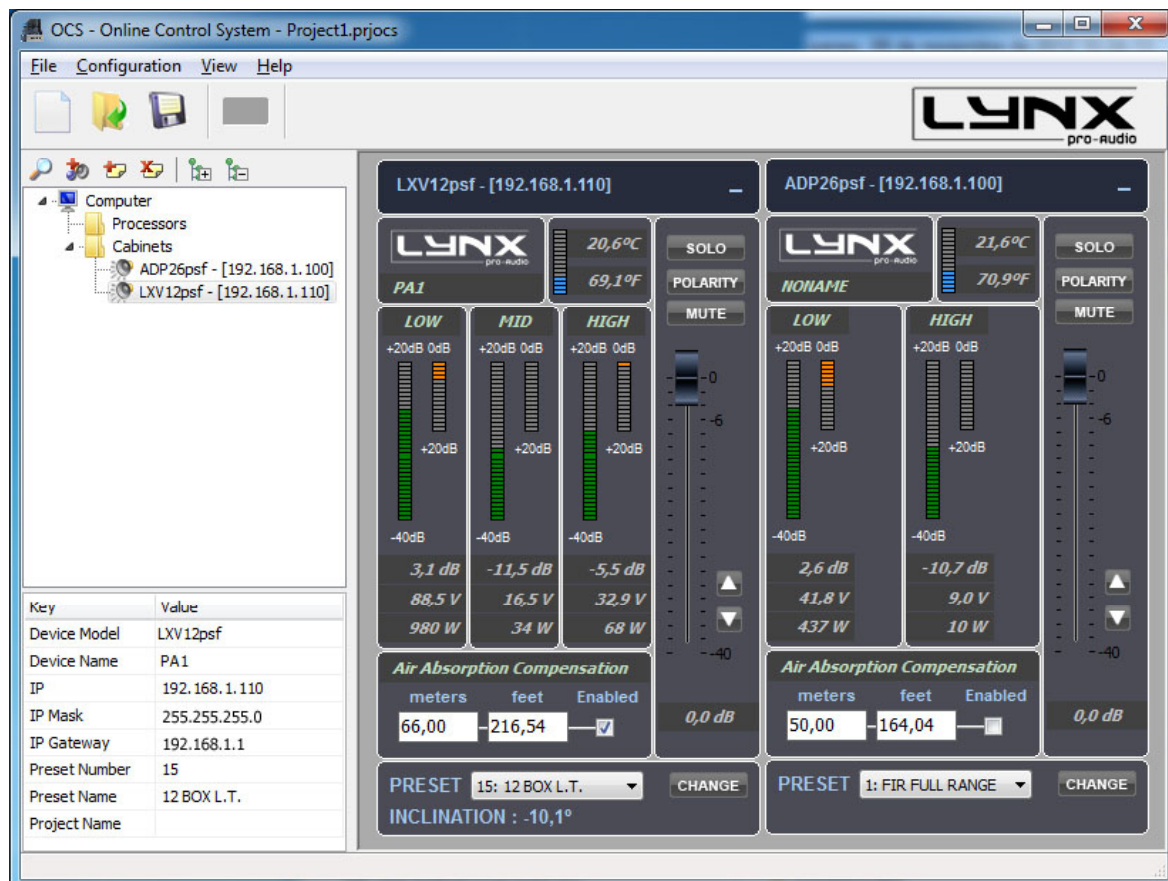
Obtain detailed information of cabinet behaviour and monitor the cabinet/s in real time. You can change the preset, gain, mute, polarity and phase. You can also activate the air absorption compensation and select the «SOLO» mode.

How does it work?

Via Ethernet (cable or wireless). Once installed, the O.C.S. software automatically detects all the cabinets connected to the network and displays them in the O.C.S. window on the users PC.

What does it show?

As well as displaying the cabinet model and IP address the O.C.S will be monitoring in real time and the user will be able to view RMS levels, Input clip, power module temperature, compression levels, air absorption compensation and cabinet angulation.



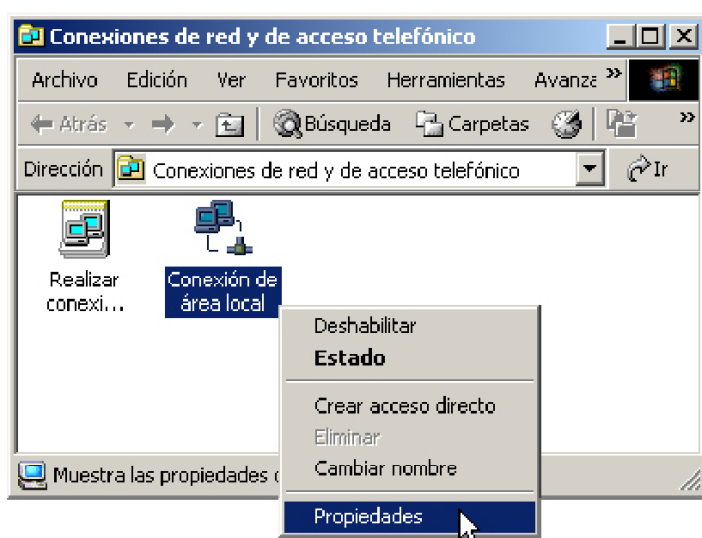
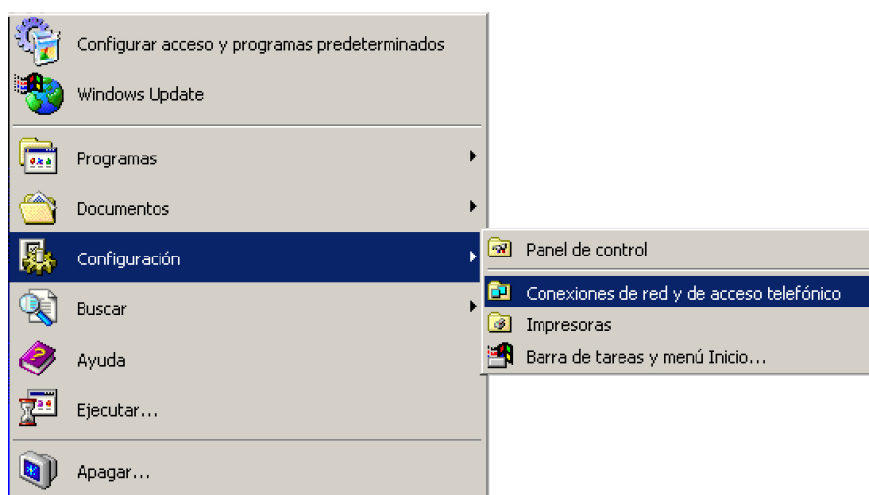
CONFIGURING ETHERNET TO WORK WITH THE ADP-28M

There are two possible ways to connect:

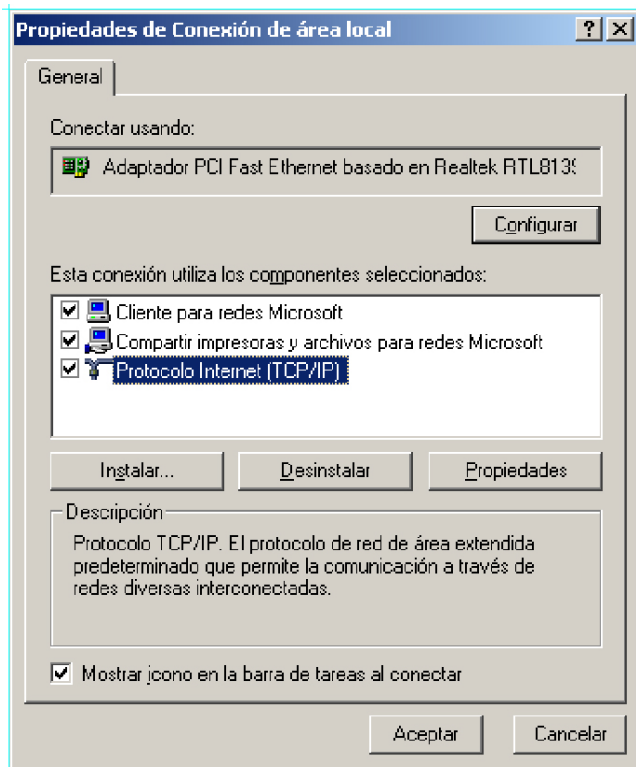
- 1.- Connecting through an ETHERNET SWITCH/HUB::
 - You will need a normal CAT5 Cable.
- 2.- Connecting through a Wirless ETHERNET.

Let us now proceed to configure the Ethernet network, setting the IP address of the computer as static. To do this go to:

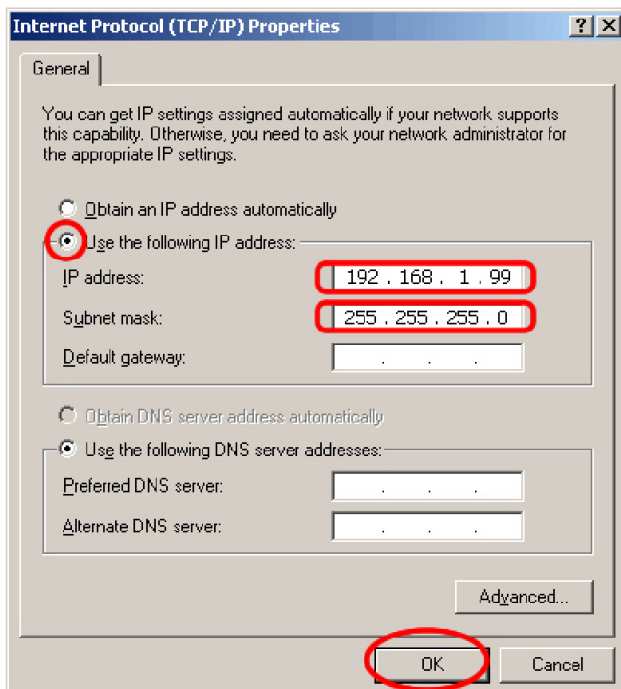
START > CONFIGURATION > NETWORK CONFIGURATION



We will launch the properties of "Local Area Connection" by clicking the right mouse button and clicking on properties.



Select "Internet Protocol (TCP / IP)" and click on properties.



Select: "Use next IP Address" And write as you wish, in order to configure your network.

Normally, Ip values will be something like this:

IP Address: 192.168.1.xxx
Subnet Mask: 255.255.255.0

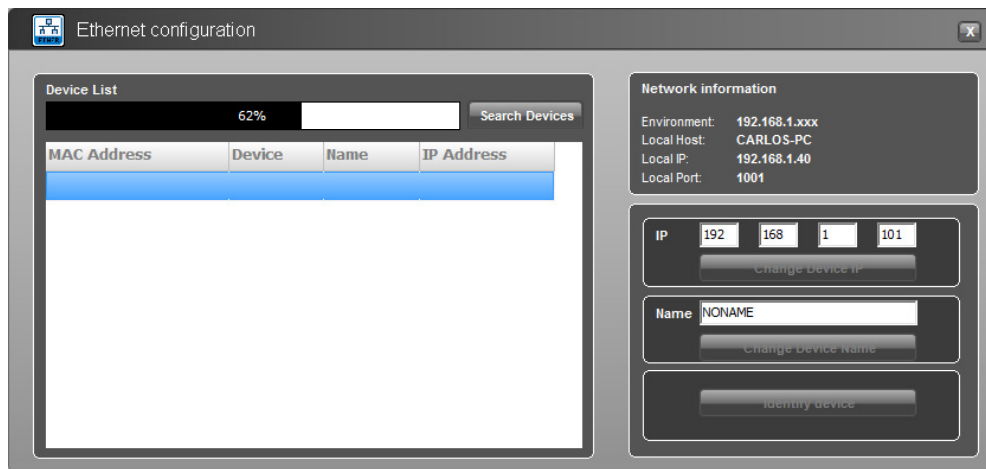
Where xxx will be a number between 1 and 254

Accept to quit the network settings and again to apply them at the next screen. Depending on the Windows Version, you will be asked to reboot or not.

Once the Computer is configured with a static IP proceed to connect to the line array system through the O.C.S. (online control system) software.

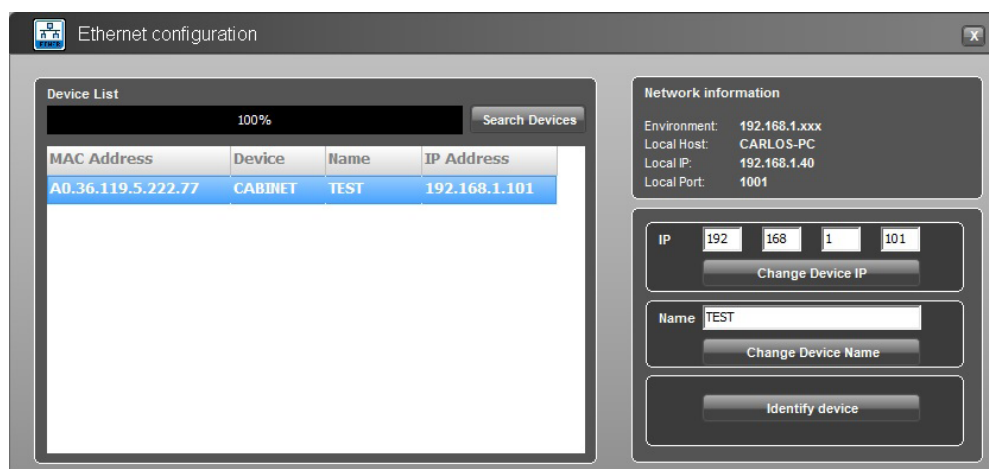
Open the OCS Software and from the Initial Screen choose **Ethernet Device** into the Configuration menu.

It will open a different screen, as follows, there you can see your Network configuration, and the cabinets currently connected.



If you want to change the IP in order to be able to connect to the cabinet then just select the cabinet and modify the assigned IP.

By default, the Cabinet will have this IP 192.168.1.101



The Network environment consists in the first 3 sets of three numbers separated by dots. In order to detect/communicate with the cabinets, the software and the cabinets **must have the same Network settings**.

If it is not in the same environment Windows Profesional (2000, XP, VISTA) will detect it, but is not going to be able to establish connection. In Windows Home, the processor is not going to be detected until the same environment is applied.

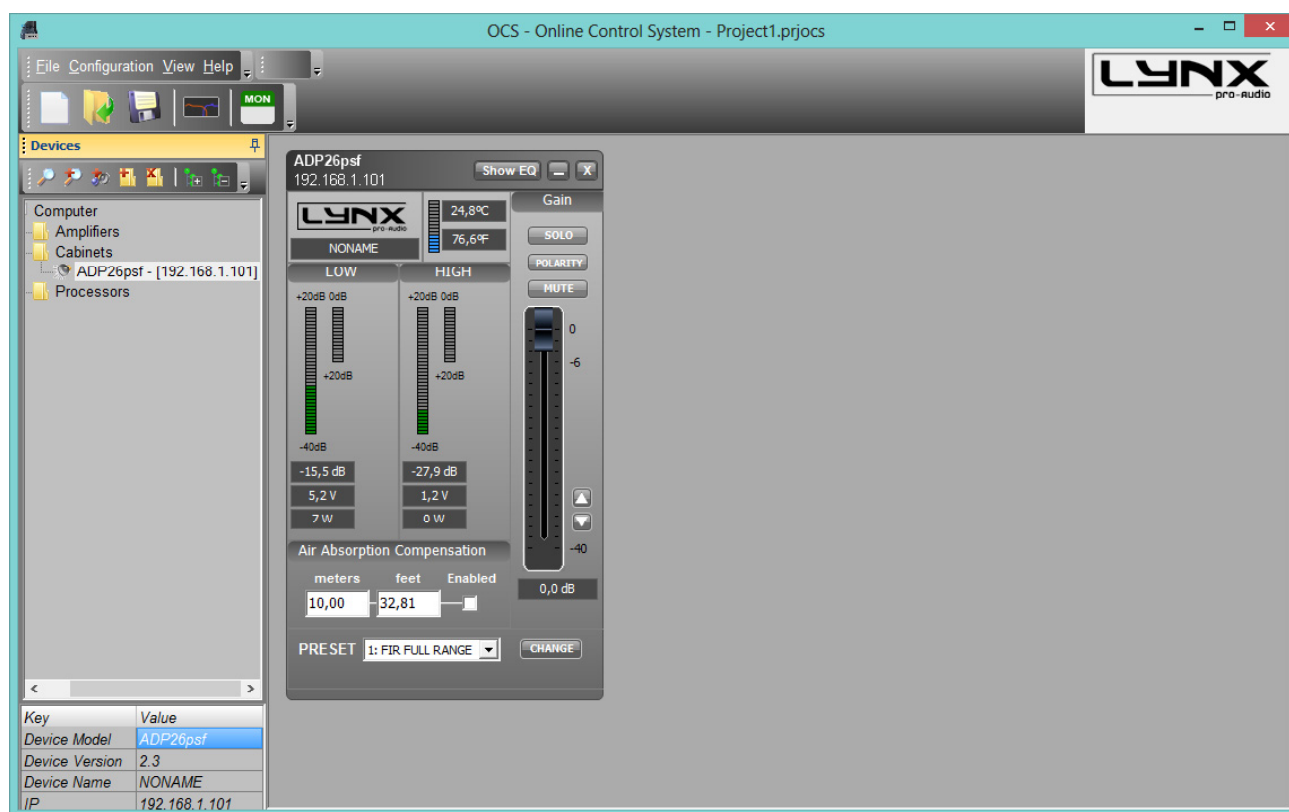
In order to **change the IP** settings to have the same configuration as the PC, we can change the IP address of the cabinets by clicking in the *Assign IP to select Device* button after writing in the box above the desired data. Remember there cannot be two devices with exactly the same IP address, the last set of three numbers has to be different and unique to each one of the devices.

for example, write 192.168.1.101 and click “**Change Device IP**” button.

The OCS software will send the new IP to the cabinet and it will scan the network again showing the same information as before, plus more information such as Pc name, IP address and Port in which the communication is established.

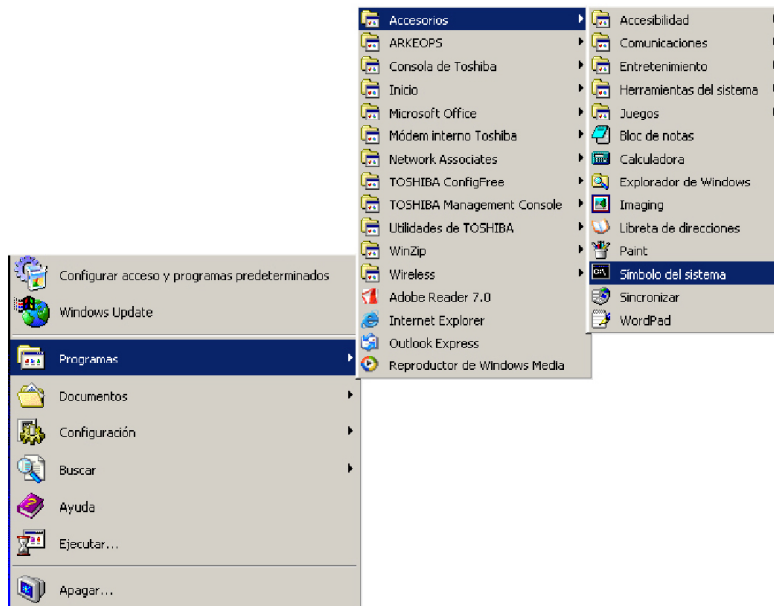
When we have a lot of cabinets connected in the network we can use the button “**Identify Device**” to see which box is selected (two activity LEDS will blink for one second). With that information then we can “**Change device NAME**” assigned to this Cabinet by clicking in the “**Change Device Name**” button after writing in the box above the desired Name.

Returning to the main screen, we can see each cabinet showing: RMS levels, Input clip, power module temperature, compression levels, air absorption compensation and cabinet angulation, as well as displaying the cabinet model and IP address.



If you need to know the PC Network settings go to:

START > ALL PROGRAMS > ACCESSORIES > Command Prompt



It will open the cmd.exe from where you can type the IPCONFIG command (ipconfig + Enter), which will show your actual IP settings.

```
Microsoft Windows [Versión 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\sala>ipconfig

Configuración IP de Windows 2000

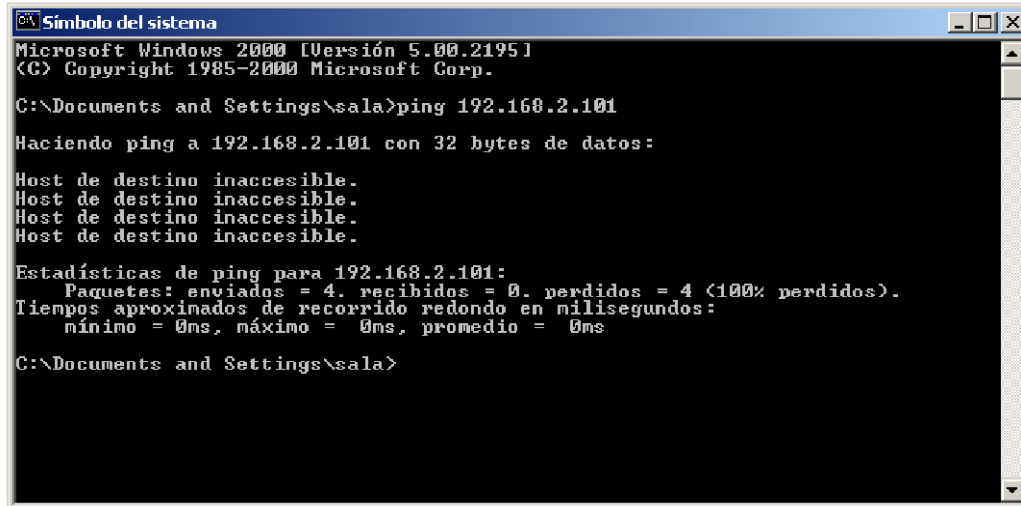
Ethernet adaptador Conexión de área local:

    Sufijo DNS específico de la conexión. :
    Dirección IP. . . . . : 192.168.2.99
    Máscara de subred . . . . . : 255.255.255.0
    Puerta de enlace predeterminada . . . :

C:\Documents and Settings\sala>
```

Here we can see that this PC has IP set as 192.168.2.99.

You can also use the command prompt to know if an IP is already in use by another device. In this case type "ping IP" (ping 192.168.2.xxx) and press enter. If there is no device with this IP you will see the following information:



```
Símbolo del sistema
Microsoft Windows [Versión 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\sala>ping 192.168.2.101

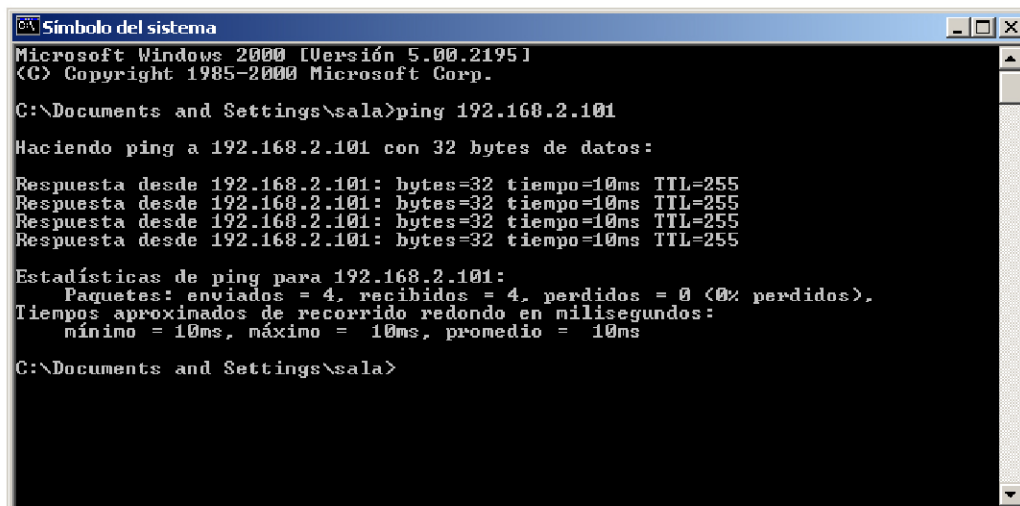
Haciendo ping a 192.168.2.101 con 32 bytes de datos:

Host de destino inaccesible.
Host de destino inaccesible.
Host de destino inaccesible.
Host de destino inaccesible.

Estadísticas de ping para 192.168.2.101:
    Paquetes: enviados = 4, recibidos = 0, perdidos = 4 (100% perdidos).
    Tiempos aproximados de recorrido redondo en milisegundos:
        mínimo = 0ms, máximo = 0ms, promedio = 0ms

C:\Documents and Settings\sala>
```

If the IP is in use, the device will respond to the Ping, and we will obtain this information:



```
Símbolo del sistema
Microsoft Windows [Versión 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\sala>ping 192.168.2.101

Haciendo ping a 192.168.2.101 con 32 bytes de datos:

Respuesta desde 192.168.2.101: bytes=32 tiempo=10ms TTL=255
Respuesta desde 192.168.2.101: bytes=32 tiempo=10ms TTL=255
Respuesta desde 192.168.2.101: bytes=32 tiempo=10ms TTL=255
Respuesta desde 192.168.2.101: bytes=32 tiempo=10ms TTL=255

Estadísticas de ping para 192.168.2.101:
    Paquetes: enviados = 4, recibidos = 4, perdidos = 0 (0% perdidos).
    Tiempos aproximados de recorrido redondo en milisegundos:
        mínimo = 10ms, máximo = 10ms, promedio = 10ms

C:\Documents and Settings\sala>
```

You now have the Cabinets working in the ETHERNET Network Enviroment.

**DECLARATION OF CONFORMITY**

LYNX Pro Audio S.L.
Calle 7 - Pol. Ind. Picassent
E-46220 Picassent (Valencia)

Lynx Pro Audio S.L. declares that ADP series are in conformity with the following EC directives:

Low Voltage Directive	2006/95/EC
Electromagnetic Compatibility EMC	2004/108/EC
RoHS Directive	2002/95/EC

In accordance with Harmonized European Norms:

EN 60065:2002	Audio, video and similar electronic apparatus. Safety requirements
EN 55103-1:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 1: Emission.
EN 55103-2:1996	Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.
ADP series models:	ADP-215 / ADP-15 / ADP-12 / ADP-26 / ADP-15M / ADP-12M / ADP-28M ADP-212M / ADP-18S / ADP-12S

WEEE Declaration: Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact Lynx Pro Audio S.L.

LYNX PRO AUDIO GUARANTEE

Lynx products are guaranteed against every kind of manufacturing fault 2 year after the date of sale. When products are under guarantee, the repairing and the free supplying of the device parts in order to correct any kind of defect are guaranteed by Lynx Pro Audio S.L. In the case that the product could not be returned to the factory for checking and repairing, Lynx Pro Audio S.L. would supply all the necessary parts.

Lynx Pro Audio S.L. is not responsible for any damage or defect caused during the transport or caused by an undue or improper handling by a non-authorized person during the life of this guarantee.

All our products undergo rigorous tests and quality controls. We guarantee the characteristics described here within and their quality against any fabrication defect.

The user loses all warranty rights if he incorporates or carries out any modification to the product, if he uses it outside of the stated safe working loads or does not secure the system properly using all the pins in their corresponding holes.